

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all previous versions and listings of claims in this application.

Claim Listing:

1. (Previously Presented) A method for deciding whether a mobile station used by a subscriber is allowed to camp in a cell of a mobile communications system comprising location areas each associated with a respective Location Area Code (LAC), wherein within each location area, the mobile station may move without updating its location, the method comprising:

defining some of the location areas to be exclusive location areas each associated with a respective LAC, an exclusive location area comprising exclusive cells for which an exclusive service condition is defined;

receiving, via a cell, a request for location update which initiates a location update procedure for updating the subscriber's location to a new location area and includes a new LAC for the location area to which the subscriber would like to update;

checking during the location update procedure whether the new location area indicated by the LAC is defined as an exclusive location area; and

if the new location area is an exclusive location area,

- using the exclusive service condition of the cell in determining whether or not the subscriber is allowed to camp in the cell,

- allowing the mobile station to camp in the cell by accepting the location update if the subscriber is allowed to camp in the cell, and

- preventing the mobile station from camping in the cell by rejecting the location update if the subscriber is not allowed to camp in the cell.

2. (Previously Presented) A method according to claim 1, the method further comprising maintaining information about location areas that are defined as exclusive location areas in a network element configured to reject or accept location updates.

3. (Previously Presented) A method according to claim 2, the method further comprising:

maintaining cell information indicating whether a cell is an exclusive cell; and

using said cell information to define whether the new location area is an exclusive location area.

4. (Previously Presented) A method according to claim 1, the method further comprising:

receiving an indication indicating whether the cell is an exclusive cell during location update; and

deciding on the basis of the indication whether the location area of the cell is an exclusive location area.

5. (Previously Presented) A method according to claim 1, wherein

the mobile communications system comprises local service areas;

the exclusive cells are exclusive access cells; and

whether or not the subscriber is allowed to camp in the cell is determined by comparing local service area information of the cell to the subscriber's local service area information.

6. (Previously Presented) A method according to claim 1, wherein

the mobile communications system comprises local service areas, each associated with a respective Local Service Area identification (LSA-ID);

the exclusive cells are exclusive access cells;

whether or not the subscriber is allowed to camp in the cell is determined by comparing local service area information, including a Local Service Area identification LSA-ID, of the cell to the subscriber's local service area information; and

the method further comprises:

defining location areas so that when an exclusive access cell belongs to a location area, the other cells in that location area are also exclusive cells;

maintaining information about location areas comprising exclusive cells; and

using that information to decide whether the location area of the cell is an exclusive location area.

7. (Previously Presented) A method according to claim 5, further comprising receiving the location area identity LAC of the cell, the local service area information LSA-ID of the cell and the subscriber's identification information during the location update.

8. (Previously Presented) A method according to claim 5, the method further comprising:

broadcasting the location area identity LAC of the cell and the local service area information LSA-ID of the cell;

broadcasting an indication of exclusive access (EA) indicating that the cell is an exclusive access cell on a broadcast channel when the cell is an exclusive access cell;

when receiving the new location area identity and said indication in the broadcast in the mobile station,

- comparing the local service area information LSA-ID of the cell with the subscriber's local service area information LSA-ID stored in the mobile station; and

- if there is a match, camping in the cell by sending a location update request, or

- if there is no match, trying to find a suitable cell in which to camp and if a suitable cell is not found, entering a limited service state.

9. (Previously Presented) A method according to claim 1, further comprising rejecting the location update with the cause "roaming not allowed in this location area".

10. (Currently Amended) A method for deciding whether to trigger a location update by a mobile station used by a subscriber, the method comprising:

defining location areas each associated with a respective location area identity, Location Area Code (LAC), so that all exclusive cells are in exclusive location areas comprising exclusive cells for which an exclusive service condition is defined;

broadcasting the location area identity LAC;

broadcasting an indication of exclusive access (EA), indicating that a cell is an exclusive cell that belongs to an exclusive location area;

determining, in the mobile station, whether the mobile station is allowed to camp in the cell in response to receiving a new location area identity LAC) and identify LAC and the indication EA indicating an exclusive cell in the broadcast; and

if camping is allowed, sending a location update request, or

if camping is not allowed, trying to find a suitable cell in which to camp and if a suitable cell is not found, entering a limited service state in the mobile station.

11. (Previously Presented) A method according to claim 10, wherein

the mobile communications system comprises local service areas, each indicated by a Local Service Area identification (LSA-ID);

the exclusive cells are exclusive access cells; and

the method further comprises,

broadcasting local service area information including the LSA-ID;

comparing the broadcast local service area information of the cell with the subscriber's local service area information LSA-ID in the mobile station in response to receiving a new location area identity LAC and the indication EA indicating an exclusive access cell in the broadcast; and

if there is a match, sending a location update request, or

if there is no match, trying to find a suitable cell in which to camp and if a suitable cell is not found, entering a limited service state.

12. (Previously Presented) A network comprising:

exclusive cells and other cells via which a mobile station may be connected to the network,

location areas each identified by a Location Area Code (LAC) and defining groups of cells, and

at least one mobile station which is arranged, in response to a new location area, to send a location update request including the identity of the new location area LAC and information about the subscriber using it,

wherein

at least one of the location areas identified by the LAC is defined to be an exclusive location area comprising at least one exclusive access cell for which exclusive service condition is defined, and

the network is arranged to access information about exclusive location areas and, in response to a location update of a mobile station, to check whether the location area in the location update and indicated by LAC is defined as an exclusive location area and if it is, to use the exclusive service condition of the cell to determine whether or not the subscriber is allowed

to camp in the cell, and to reject the location update if the subscriber is not allowed to camp in the cell.

13. (Currently amended) A network according to claim 12, wherein

the network is arranged to broadcast the location area identity LAC of the cell and an indication (EA) that the cell is an exclusive cell EA-when the cell belongs to an exclusive location area, and

the mobile station is arranged, in response to receiving a new location area identity LAC and said indication EA, to determine whether the mobile station is allowed to camp in the cell, and if it is allowed, to send a location update request to the network, or if it is not allowed, to try to find a suitable cell in which to camp and if a suitable cell is not found, to enter a limited service state.

14. (Previously Presented) A network according to claim 12, wherein the network comprises local service areas each indicated by a Local Service Area identification (LSA-ID) defining local services for subscribers via cells or a cell defined as belonging to a local service area LSA, and the network is further arranged to receive information on the local service area LSA of the cell and to check whether the subscriber is allowed to camp in the cell by comparing the local service area information LSA-ID of the cell to the subscriber's local service area information LSA-ID.

15. (Previously Presented) A network according to claim 14, wherein

the network is arranged to broadcast the location area identity LAC of the cell, the local service area information LSA-ID of the cell and an indication EA that the cell is an exclusive access cell when the cell is an exclusive access cell, and

the mobile station is arranged, in response to receiving a new location area identity LAC and said indication EA, to compare the broadcast local service area information LSA-ID of the cell with the subscriber's local service area information LSA-ID, and if there is a match, to send a location update request to the network, or if there is no match, to try to find a suitable cell in which to camp and if a suitable cell is not found, to enter a limited service state.

16. (Currently amended) A network element in a mobile communications system taking part in location update procedures between the system and a mobile station, ~~which system comprises said system comprising~~ location areas each associated with a respective Location Area Code (LAC), wherein within each location area the mobile station may move without updating its location,

wherein

the network element is arranged to store or to have access to information about location areas defined as exclusive location areas each associated with a respective LAC, an exclusive location area comprising one or more exclusive access cells for which an exclusive service condition is defined, and, in response to a location update to a cell belonging to a location area identified a new LAC, to check whether the location area indicated by the new LAC to which the location update is targeted is defined as an exclusive location area and if it is, to use the exclusive service condition of the cell to check whether the subscriber is allowed to camp in the cell, and to reject the location update if the subscriber is not allowed to camp in the cell.

17. (Previously Presented) A network element according to claim 16, wherein the mobile communications system further comprises local service areas defining local services for subscribers via cells or a cell defined as belonging to a local service area, and wherein the network element is further arranged to receive information, including a Local Service Area identification (LSA-ID) on the local service area of the cell and to check whether the subscriber is allowed to camp in the cell by comparing the local service area information LSA-ID of the cell to the local service area information LSA-ID of the subscriber.

18. (Previously Presented) A network element according to claim 16, wherein the information about location areas defined as exclusive location areas comprises location areas having at least one cell which is in the area of the network element.

19. (Previously Presented) A mobile station which supports cell service definitions in a mobile communications system comprising location areas each associated with a respective Location Area Code (LAC), wherein within each location area the mobile station may move without updating its location, the mobile station being arranged to receive broadcast information about a location area of the cell, the information including the LAC of the cell, and, in response to receiving in the broadcast a new location area LAC and an indication indicating that the cell

belongs to a location area defined to be an exclusive location area comprising exclusive cells for which an exclusive service condition is defined, to use this exclusive service condition to determine whether or not the subscriber is allowed to camp in the cell, and if the mobile station is allowed to camp in the cell, to send a location update request to the system, or if the mobile station is not allowed to camp in the cell, to try to find a suitable cell in which to camp and if a suitable cell is not found, to enter a limited service state.

20. (Previously Presented) A mobile station according to claim 19, wherein the mobile communications system further comprises local service areas, each indicated by a Local Service Area identification (LSA-ID), the local service areas supporting local service area definitions, wherein

the cell service definitions supported by the mobile station comprise local service area definitions, each indicated by an LSA-ID, and

the mobile station is arranged to receive broadcast information about local service areas of a cell including the LSA-IDs of the cell and to perform the determining by comparing the local service area information of the cell with the subscriber's local service area information LSA-ID in response to receiving in the broadcast a new location area LAC and an indication EA indicating that the cell belongs to a location area defined to be an exclusive location area comprising consisting of exclusive access cells and if there is a match, to send a location update request to the system, or if there is no match, to try to find a suitable cell in which to camp and if a suitable cell is not found, to enter a limited service state.